Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Original) A method of high throughput processing of a plurality of droplets, the method comprising:

   a) dispensing each droplet onto a moving surface; and

   b) tracking each droplet's position.

10. (Original) A method according to claim 9, wherein the moving surface moves continuously.

11. (Original) A method according to claim 9, wherein the moving surface moves in a discontinuous start/stop action.

12. (Original) A method according to claim 9, wherein dispensing the droplet onto the moving surface includes:
    a) providing one or more microtiter plates to a microtiter plate handling system;
    b) providing data that identifies each microtiter plate's position to the microtiter plate handling system;
    c) commanding the microtiter plate handling system to retrieve a particular microtiter plate; and
    d) presenting a particular plate for dispensing.

13. (Original) A method according to claim 9, wherein tracking each droplet's position includes measuring and recording each droplet's position on the moving surface using a position sensor, such that each droplet is associated with a fiducial position on the moving surface.

14. (Original) A method according to claim 13 wherein the position sensor is a rotary encoder.

15. (Original) A method according to claim 13, wherein the steps of measuring and recording occur at substantially the same time each droplet is dispensed onto the moving surface.

16. (Original) A method according to claim 13, wherein recording each droplet's position includes saving each droplet's position in random-access memory.

17. (Original) A method according to claim 13, wherein tracking each droplet's position includes:

a) detecting each droplet using a drop sensor, the drop sensor at a known position relative to the position sensor; and
b) verifying that the known position corresponds to each droplet's position based on the fiducial position and position information obtained from the position sensor at each droplet's time of detection.

18. (Original) A method according to claim 17, wherein the drop sensor is located at an interface to an analyzer.

19. (Original) A method according to claim 17, wherein the drop sensor is located at a substrate station.

20. (Original) A method according to claim 17, wherein the drop sensor is located at a reactant station.

21. (Original) A method according to claim 17, further comprising:

a) recording a failure if the known position does not correspond to each droplet's position based on the fiducial position and position information obtained from the position sensor at time of detection.

22. (Original) A method according to claim 9, wherein tracking each droplet's position includes using a drop sensor to detect each droplet.

23. (Original) A method according to claim 13, further comprising:

a) dispensing a particular droplet with known analytical properties onto the moving surface; and
b) verifying position and identity of the particular droplet, wherein verifying includes:
    i) analyzing the particular droplet at a known position relative to the fiducial position so as to obtain analyzed properties,
    ii) comparing the particular droplet's analyzed properties with the particular droplet's known analytical properties,
    iii) comparing the known position against the particular droplet's position as derived from the position sensor.

24. (Original) A method according to claim 9 further comprising subjecting each droplet to a controlled environment.

25. (Original) A method according to claim 24, wherein subjecting each droplet to a controlled environment includes hanging each droplet from the moving surface for at least some period of time, each droplet adhering to the moving surface through, at least in part, surface attraction.

26. (Original) A method according to claim 24, further comprising transporting each droplet, via the moving surface, through an environmentally controlled delay line.

27. (Original) A method according to claim 9, further comprising performing at least one operation on each droplet from the group of operations consisting of mixing, diluting, concentrating, filtering, and analyzing.

28. (Original) A method according to claim 27, wherein analyzing includes performing at least one operation from the group of operations consisting of optical interrogation and mass spectrometry.

29. (Original) A method according to claim 28, wherein optical interrogation includes at least one of fluorescence spectrometry, Raman spectroscopy and UV absorption.

30. (Original) A method according to claim 27, wherein analyzing the content of each droplet includes:

a) aspirating each droplet into a dispensing unit; and
b) presenting each droplet for analysis via the dispensing unit.

31. (Original) A method according to claim 30, wherein presenting each droplet for analysis includes:

a) presenting each droplet to a mass spectrometer; and
b) determining a characteristic of each droplet by means of mass spectrometry.

32. (Original) A method according to claim 27, wherein analyzing a characteristic of each droplet includes:

a) heating each droplet so as to form an atomized spray; and
b) determining a characteristic each droplet by means of mass spectrometry.

33. (Original) A method according to claim 27, wherein analyzing a characteristic of each droplet includes:

a) applying a pneumatic force to each droplet so as to form an atomized spray; and

b) determining a characteristic of each droplet by means of mass spectrometry.

34. (Original) A method according to claim 27, wherein analyzing a characteristic of each droplet includes:

a) applying an explosive force to each droplet so as to form an atomized spray; and
b) determining a characteristic of each droplet by means of mass spectrometry.

35. (Original) A method according to claim 27, wherein analyzing a characteristic of each droplet includes:

a) vibrating each droplet so as to cause atomization; and
b) determining a characteristic of each droplet by means of mass spectrometry.

36. (Original) A method according to claim 35, wherein vibrating the droplet includes focusing a pulsed laser onto the surface in a proximity of each droplet.

37. (Original) A method according to claim 35, wherein vibrating each droplet includes focusing a pulsed laser onto the backside of the surface onto which each droplet has been deposited.

38. (Original) A method according to claim 35, wherein vibrating each droplet includes utilizing acoustic waves.

39. (Original)) A method according to claim 35, wherein vibrating each droplet includes mechanically vibrating the surface.

40. (Original) A method according to claim 35, further comprising applying a voltage to the surface onto which each droplet is deposited to assist in the formation of atomized spray.

41. (Original) A method according to claim 9, further comprising spooling a laminate onto the moving surface prior to dispensing each droplet onto the moving surface.

42. (Original) A method according to claim 41, further comprising spooling the laminate off of the moving surface after performing at least one operation on each droplet.

43. (Original) A method according to claim 41, further comprising customizing at least one surface property of the laminate from the group of surface properties consisting of cleanliness, biocompatibility, surface energy, binding affinity, porosity, chemical interaction, chemical addition, sample information encoding, and tracking.

44. (Original) A method according to claim 9, wherein the step of dispensing includes limiting each droplet to a specified volume smaller than one microliter.

45. (Cancelled)

46. (Cancelled)

47. (Cancelled)

48. (Cancelled)

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Cancelled)

55. (Cancelled)

56. (Cancelled)

57. (Cancelled)

58. (Cancelled)

59. (Cancelled)

60. (Cancelled)

61. (Cancelled)

62. (Cancelled)

63. (Cancelled)

64. (Cancelled)

65. (Cancelled)

66. (Cancelled)

67. (Cancelled)

68. (Cancelled)

69. (Cancelled)

70. (Cancelled)

71. (Cancelled)

72. (Cancelled)

73. (Cancelled)

74. (Cancelled)

75. (Cancelled)

76. (Cancelled)

77. (Cancelled)

78. (Cancelled)

79. (Cancelled)

80. (Cancelled)

81. (Cancelled)

82. (Cancelled)

83. (Cancelled)

84. (Cancelled)

85. (Cancelled)

86. (Cancelled)

87. (Cancelled)

88. (Cancelled)

89. (Cancelled)

90. (Cancelled)

91. (Cancelled)

92. (Cancelled)

93. (Cancelled)

94. (Cancelled)

95. (Cancelled)

96. (Cancelled)

97. (Cancelled)

98. (Cancelled)

99. (Cancelled)

100. (Cancelled)

101. (Cancelled)

102. (Cancelled)

103. (Cancelled)

104. (Cancelled)

105. (Cancelled)

106. (Cancelled)

107. (Cancelled)

108. (Cancelled)

109. (Cancelled)

110. (Cancelled)

111. (Cancelled)

112. (Cancelled)

113. (Cancelled)

114. (Cancelled)

115. (Cancelled)

116. (Cancelled)

117. (Cancelled)

118. (Cancelled)

119. (Cancelled)

120. (Cancelled)

121. (Cancelled)

122. (Cancelled)

123. (Cancelled)

124. (Cancelled)

125. (Cancelled)

126. (Cancelled)

127. (Cancelled)

128. (Cancelled)

129. (Cancelled)

130. (Cancelled)

131. (New) A system adapted to use the method according to any of claims 9-44.